GraphAware®   LPL Financial

GraphAware: LPL Financial case study
Reaching the "Single Brain" with Hume

Company

LPL Financial

Business

Broker-dealer

Challenge

Building a single source of truth for the organization

Solution

4 step process with Hume:
- Data ingestion
- NLP
- Enrichment
- ML phase

Results

Search optimized through tagging that was extracted through the Knowledge Graph

See Hume in Action

Seeing is believing! Schedule a live demo with one of our graph specialists.

GET A LIVE DEMO

LPL Financial provides services and support across the whole industry: from independent financial advisors to financial institutions, from local advisor teams to large-scale RIA firms, from fully autonomous business owners to advisors employed by LPL.

LPL Financial has been using graphs since 2017 and even created its own Meta-graph to better leverage graph technologies. The Meta-graph allows building knowledge graphs, and has already accounted for the tremendous and rapid progress of the company.

The company uses graphs, Neo4j, and Hume for multiple use cases focusing on search and expressions. One of the use cases for graphs and Hume is the improved and optimized search that can be maintained and scaled.

> " *The amount of savings in time and effort [the search optimization] can deliver for our home offices, for our customers, is incredible.*"
>
> **Mayank Gupta, SVP for data, LPL Financial**

The Challenges

The main challenge - the holy grail - as Wren Chan (VP of Foundational Architecture and Innovation, LPL Financial) puts it, for LPL Financial was to build **a single source of truth - a single brain** that would store all the knowledge of the organization. Having this single brain allows LPL Financial to leverage the full power of graphs via multiple business applications and use cases. Having all the organization's knowledge in one place is the first step towards mastering it. Therefore, it makes it possible to use the organization's knowledge for omnichannel experiences.

One of such use cases - challenges - for LPL Financial was optimizing search. The company has a vast number of internal documents its advisors need to be able to find (and search through) relatively quickly and easily. The failure to do so leads the employees to calling support, which translates to high costs for the company. Thus, one of the key challenges for LPL was to optimize search to save time and money.

The Solution

LPL Financial decided to approach the challenge of creating a single source of truth by creating the above-mentioned Meta-graph, which can be understood as a single brain of the organization. This Meta-graph then helped the organization to solve various use cases such as optimize search and merge duplicate documents.
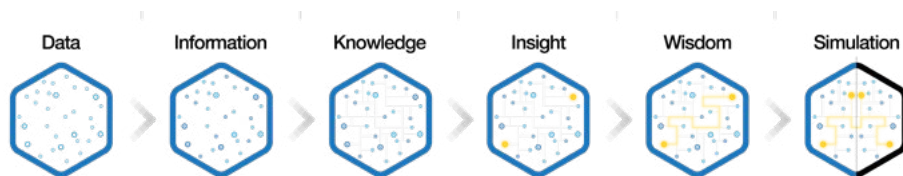
Regarding the optimization of search use case, the capture and organization of LPL's internal knowledge would allow for a more effortless knowledge transfer, making knowledge easily and rapidly available throughout the entire organization. LPL Financial uses Hume to capture knowledge from its how-to guides, resource centre documents, etc.

To do so, LPL Financial and Hume undergo a 4-stage process. First, LPL **loads the documents** into the Meta-graph - that is, ingests the documents into Hume. Secondly, a basic **NLP algorithm** is applied - this algorithm extracts keywords from the ingested documents. Then, the data is **enriched** - in other words, the extracted keywords are tied to other data sources such as

Data > Information > Knowledge > Insight > Wisdom > Simulation

generic concept knowledge graphs, Investopedia glossaries, company internal dictionaries, etc. To include only the keywords relevant to finance, the similarity of concepts is assessed. This allows for filtering of the extracting keywords & inclusion of only the relevant ones. The last step would be the **ML phase** (at the time of writing not yet used) - which

leads to extraction of even more tags from the document - and thus makes the entire process more accurate and effective.

Thanks to this process, LPL Financial was able to extract their documents' core concepts and use them to enable a rich omnichannel experience.

The Results

The above described process led to optimizing search. Already the above described, as an out of the box solution, resulted in increased search accuracy by approximately 10%. The accuracy could be further improved by assigning different values to other tags and further tuning the solution by, e.g., adding feedback mechanisms.
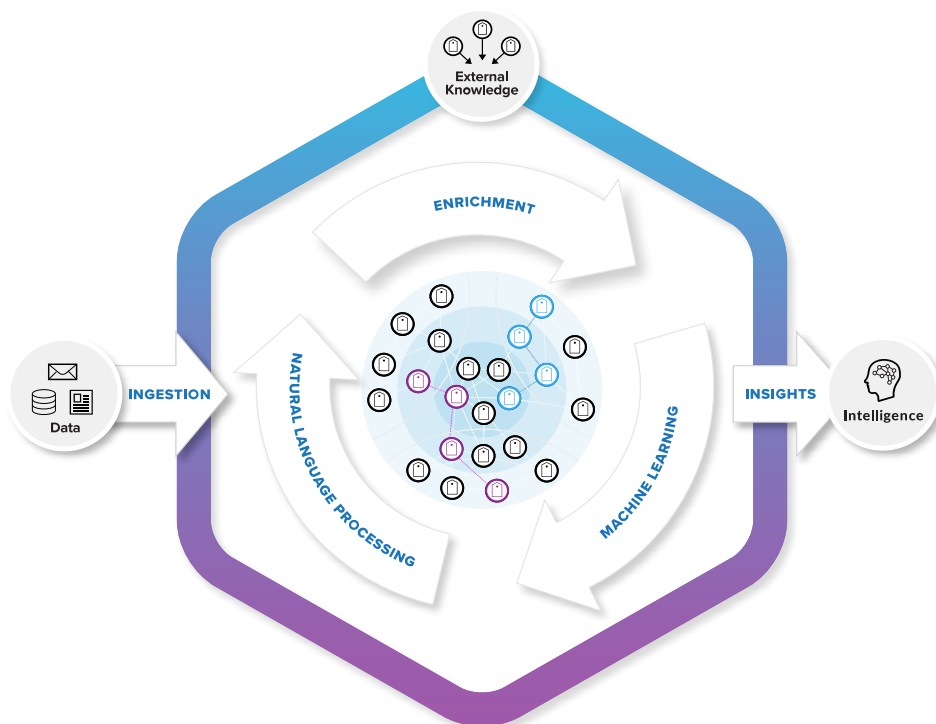
Already the 10% increase in the search accuracy that the "raw" out of the box solution has accounted for, is a tremendous improvement which translates to significant savings in terms of time and effort.

Going Further

Another example of the Meta-graph's use cases that further underlines the potential of knowledge graphs is the use case of Related Documents. With Hume and their Meta-graph, LPL Financial was also able to assess the similarity of their documents based on keyword co-occurrence. This allowed for clustering, analysis, and merger of duplicate "zombie" documents.

Are you interested in seeing what Hume can do for your business?

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